REMARKS

I. Status of the Subject Application

At the outset, Applicant wishes to express appreciation to Examiner Ngo for determining that the subject application contains patentable subject matter.

Claims 145-214 are pending. Claims 145-162 and 181-198 are allowed. Claims 167-169 and 201-214 are objected to and claims 163-166, 170-180, 199, and 200 stand rejected. In the present Amendment, Applicant has amended independent claims 163 and 199 to clarify certain aspects of those inventions. Claim 173 has also been amended to address an objection recited in the Official Action.

II. Claim Objections

Claim 173 was objected to because of the use of the phrases "third hinge block" and "fourth hinge block". Applicant has amended claim 173 to address such objection.

III. The Rejections Under 35 U.S.C. § 102(b)

Claims 163-166 and 172 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,966,104 to Massey et al. Without acquiescing to or admitting to any of the specific assertions in the Official Action concerning Massey et al., and expressly reserving the right to address such assertions in the future, Applicant respectfully submits that amended claim 163 and the claims that depend therefrom are not anticipated by Massey et al. for at least the reasons stated below.

Massey et al. discloses a satellite antenna with movable reflectors. Massey et al. provides:

> What is needed is an antenna that has dual reflectors which are movable with respect to each other between stowed and deployed positions. With these features, the reflectors could fit into a small payload in the stowed position and then expand into the deployed position once the satellite reaches orbit.

Column 1, lines 3035 of Massey et al. (emphasis added). Massey et al. fails to disclose a load

bearing mast arrangement as recited in Applicant's amended claim 163. As may be appreciated from the above-quoted passage, the moving mechanism 30 of Massey et al. is designed to simply move the reflector shells apart from each other after the satellite has been placed into orbit and weight is not an issue. Such configuration is fundamentally different from the mast recited in amended claim 163.

As discussed in detail in Applicant's application, the articulated masts may be used to support objects such as antennas and the like above a surface. See, for example, Figures 33 and 33 and paragraph [000147] of the subject application as filed. When in the fully extended position (when the mast segments are coaxially aligned), those mast segments must support the weight of the antenna and the base and each succeeding segment must support the weight of the mast segment(s) above it as well as any antennas or other objects attached to those mast segments. The weight load, which may be significant, is transmitted axially through the mast segments to the base member or the mast pole. For example, in practice, at least one of Applicant's masts has been successfully used to support ten antennas as well as three microwave dish antennas several feet above the ground. In addition, such mast arrangements are also capable of withstanding wind loads as was discussed in paragraph [000162] of Applicant's application.

In the present Amendment, Applicant has amended claim 163 to reflect that the base member and the first and second mast segments are load bearing and, when the second mast segment is coaxially aligned with the first mast segment, the second mast segment transfers at least a portion of the weight of the at least one object to the base member. As indicated above, when the moving member 30 of Massey et al. is moved to the extended or deployed position, the satellite antenna is in orbit where weight is not an issue. Such moving member is not designed to support or transfer the weight of the shells as recited in amended claim 163. Thus, for this reason alone, Massey et al. does not anticipate amended claim 163 or the claims that depend therefrom.

Massey et al. also fails to anticipate claim 163 because it lacks means specifically to

return the segments 54 and 56 to stored or collapsed position. In particular, Massey et al. discloses that the moving member 30 comprises a pyrotechnic device that, once triggered, moves to the extended position. Notably, Massey et al. provides:

> Moving mechanism 30, a pyrotechnic device, is preferably a spring-loaded hinge. Spring-loaded hinge 30 includes a rear support cylinder segment 54 and a front support cylinder segment 56. Segments 54 and 56 are connected by dual springs 58 and a pivot pin 60. Dual springs 58 include two springs separated by a spring divider 62. Dual springs 58 are tensioned to force segments 54 and 56 to pivot away from each other on pivot pin 60.

Column 4, lines 10-17 of Massey et al. Massey et al. also provides:

> Rear segment 54 further includes a female launch lock clevis 80 and front segment 56 further includes a corresponding male launch lock clevis 82. Clevis 80 and 82 are configured to be locked together when spring-loaded hinge 30 is in the stowed configuration. Clevises 80 and 82 are also configured to be actuated by a pin puller (not specifically shown) and unlock to enable segments 54 and 56 of spring loaded hinge to move to the deployed configuration.

Column 4, lines 34-41 of Massey et al. Thus, the moving member 30 of Massey et al . is only deployed into the extended position illustrated in FIGS, 5B and 6B when the satellite antenna has been deployed into orbit. There is no mention of returning the segments to the stowed position. Indeed, the springs 58 are designed to retain the segments in the extended position. Thus, Massey et al. does not anticipate amended claim 163 and the claims that depend therefrom for this reason, in addition to the foregoing reasons.

IV. The Rejections Under 35 U.S.C. § 103(a)

Claims 170, 171, 173-180, 199, and 200 have been rejected under 35 U.S.C. § 103(a) as being obvious over Massey et al. Claims 170, 171, and 173-180 depend from claim 163 which, as was discussed above, is seen to be patentable over Massey et al. Even if it were obvious to provide the Massey et al. satellite with the features recited in dependent claims 170, 171 and 173-180, which Applicant submits that it would not have been obvious, the resulting device would at least lack the features of claim 163.

With respect to claims 199 and 200, those claims concern an articulated mast that has a third load bearing mast segment which is not disclosed in Massey et al. Claim 174, which depends indirectly from claim 163, also recites that the articulated mast further comprises a third mast segment. There is no teaching in Massey et al. of providing the moving member 30 with an additional movable segment. In fact, as can be appreciated from the following passages of Massey et al., Massey et al. teaches away from such arrangements. In particular, Massey et al. provides:

> **Launching of satellites imposes strict requirements concerning size, weight, and resistance to acceleration forces of the payload.** Prior art dual reflectors are fixed spaced apart in the deployed position with respect to one another. Because the position of the reflectors is fixed, the reflectors take up a large volume. Quite often the payload envelopes of the satellites cannot store the fixed reflectors. The solution to this problem automatically implies a large size launch configuration of the satellite.

Column 1, lines 21-29 of Massey et al. (emphasis added). Massey et al. further provides:

> This solution has obvious disadvantages. What is needed is an antenna that has dual reflectors which are movable with respect to each other between stowed and deployed positions. With these features, the reflectors **could fit into a small payload** in the stowed position and then expand into the deployed position once the satellite reaches orbit.

Column 1, lines 30-36 of Massey et al. (emphasis added). Massey et al. also discloses:

> The advantages accruing to the present invention are numerous. Because the reflectors are movable with respect to one another, they can be packaged into a launch vehicle without violating the envelope of the launch vehicle. Thus, **the strict launching requirements may be met in more situations.**

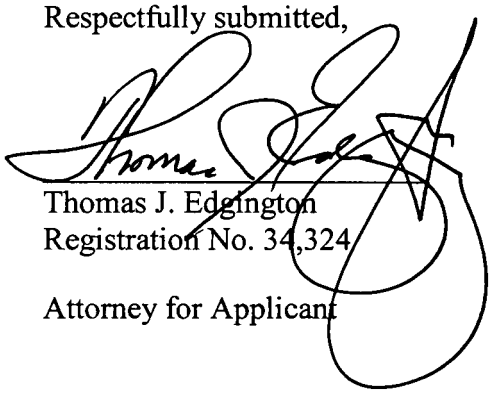
Column 2, lines 3-8 of Massey et al. (emphasis added). Thus, the moving member 30 of Massey et al. is employed to move the reflectors apart from each other. There is no teaching to add additional unnecessary segments which would add weight and mass to the device and which could result in the inability of the satellite to be accommodated by the launch vehicle. Accordingly, Massey et al. does not teach the advantage of adding additional segments and, as

discussed above, teaches away from such arrangements. Thus, claims 173-180, 199 and 200 are not obvious over Massey et al. for these reasons, in addition to the reasons discussed above.

V. Conclusion

Applicant respectfully submits that all of the pending claims are in condition for allowance. Accordingly, reconsideration and removal of the objection and rejections and passage to allowance of all of the pending claims are earnestly solicited. If the Examiner has any remaining concerns regarding the patentability of any of the pending claims, he is invited to contact the Applicant's undersigned attorney at the telephone number listed below so that those concerns may be expeditiously addressed.

Respectfully submitted,



Thomas J. Edgington
Registration No. 34,324

Attorney for Applicant

Kirkpatrick & Lockhart Preston Gates Ellis LLP
Henry W. Oliver Building
535 Smithfield Street
Pittsburgh, Pennsylvania 15222

(412) 355-8303